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East Europe Report

SCIENTIFIC AFFAIRS

No. 686

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CONTENTS

INTERNATIONAL AFFAIRS

Development of Bloc-Polish Computer Data Security Outlined
(WIADOMOSCI STATYSTYCZNE, Oct 80).. 1

Hungarian-Polish Relations in Computer Affairs
(Bela Igaz; SZAMITASTECHNIKA, Jul-Aug 80)................................ 2

Briefs
UREA Machinery Contract Signed 5

ALBANIA

Developments in Biological Sciences Reviewed
(T. Tartari; BULETINI I SHKENCAVE TE NATYRES, Apr-May-Jun 80).. 6

BULGARIA

New Photo Processing Technology Developed
(Georgi Vasilev; ZEMEDELSKO ZNAME, 23 Sep 80).......................... 10

CZECHOSLOVAKIA

Briefs
New Ethylene Plant 12
Radio Relay Computer Interconnection 12
Natural Gas Discovery 13
New Dicalcium Phosphate Plant 13
Field Mouse Outbreak 13
Natural Gas Storage in Mines 13

HUNGARY

Head of Computer Technology Applications Developing Society Interviewed
(Matyas Arato Interview; SZAMITASTECHNIKA, Jul-Aug 80).......... 14

Computer Programs for Students, Graduates of Chemical Engineering (NEPSZABADSAG, 4 Oct 80).. 18

Utilization of MPS-7541 Calculator Integrated Circuit (HIRADASTECHNIKA, No 8, 1980).................................. 20

Briefs
Vilati Modules 21

POLAND

Briefs
Replacing Computers With Microcontrollers 22

DEVELOPMENT OF BLOC-POLISH COMPUTER DATA SECURITY OUTLINED

Warsaw WIADOMOSCI STATYSTYCZNE in Polish No 10, Oct 80 pp 32-36

[Excerpts] The problem of data security in statistical offices was the subject of discussion at the 18th Session of the Permanent Working Group for CEMA matters on automation of statistical data processing in the autumn of 1979. One method of computer memory hardware security is to apply the so-called paging system. For example, the memory in IBM 370 computers is divided into equal blocks, and a key, which is either four zeros or number-one digits long, is assigned to each block. The second series of the uniform-system computers, such as the EC-1055, also has these features which are being used in the security system.

Knowledge in the field of technological data security under computer processing conditions is still not too well developed in Poland; this is one of the symptoms of the still relatively ineffective dissemination of information science. Without going into the details which were published in a conference report--"Legal Problems of Computerized Information Systems" (Wroclaw, 20-21 May 1976, pp 301-317)--it must be frankly stated that a view of the situation on existing security measures entitled the authors of the report then to formulate carefully their opinion that the Polish electronic centers were still not appropriately prepared at that time to process data of a confidential nature.

Certain systems are especially exposed to penetration. At the current intermediate level of hardware and software which are accessible in Poland, the initial and still faulty attempts to use the so-called multi-access data banks should be considered very carefully. The assessment cited for U.S. conditions by Lance J. Hoffman should be a warning: "...today's state of the art is such that extremely sensitive (confidential) information should not be stored in any multi-access computerized data bank system." The two-year experience of gradually applying modern methods of data security in the computer systems of the Main Statistical Office [GUS] indicates the great importance of this sector in the overall improvement and modernization of state statistical computer systems. Considering the experience acquired from the operation of relatively modern computer hardware installed for the Planning Commission of the Council of Ministers etc and the extensive foreign literature on data security, GUS has conducted more systematic studies in this important sector of computer data processing technology.

CSO: 2602

HUNGARIAN-POLISH RELATIONS IN COMPUTER AFFAIRS

Budapest SZAMITASTECHNIKA in Hungarian Jul-Aug 80 p 18

[Article by Bela Igaz]

[Text] Polish-Hungarian computer relations look back over more than 10 years. We can count the start of these relations from the Hungarian appearance of the second-generation ODRA's. A more important move forward, however, came only with the development of the ESZR [Uniform Computer Technology System] program. Among the Polish tasks undertaken in the ESZR we may stress the R30 category, medium-performance computer--which Poland developed together with the Soviet Union--as a means which the domestic users can always acquire through socialist import. It is true that the Soviet Union also is a supplier in this category, but the Polish R32, the so-called "completely automated control system linked to facilities" which serves to solve a specific application goal task, cannot be replaced with anything in the domestic application plans.

To complete their systems the Poles themselves develop and manufacture a significant portion of their necessary peripheral means, and rely only partly on the products of other socialist countries. For example, they were successful, after the perforated tape had passed its peak, in changing over to magnetic tape and the soft disc techniques. Besides the higher performance series line printer which fits well with medium computers in price and performance, worthy of note is the mosaic printer which is outstanding in its category. Display development and manufacture have also reached a level that meets their requirements. According to recent information they are also planning the manufacture of a large capacity (100 MByte and greater) magnetic disc storage.

The series would not be complete if we did not mention the sphere of TAF (telecommunications processing) means and systems developed on the Polish communications industry base, and which is manufactured now in large volume. In February 1980 our Polish partners demonstrated operationally to Hungarian experts the "Tele-JS" subsystem, which is built of a 1 MByte operative memory central units (ESZ 2032); local display systems (ESZ 27910); 48 Kbyte operative memory 16-channel TAF processor (ESZ 83,7101); start-stop terminals (ESZ 8575); as well as terminal systems consisting of cluster and single displays. Our partner achieved important results in the development of the RJAD-2 TAF system. Essentially, it manufactures in series every modeme belonging to every speed category. In addition, on the basis of a SAAB license and on the basis of a LOGABAX license for video terminals they manufacture print out terminals, and among the socialist countries it is the Polish industry that is first manufacturing TAF processors.

In the manufacture of MSZR means, Poland, like its partners, has begun the making of a structure that is near to the profile already existing in the ESZR, which we will not now discuss in its details like the developments of ESZ II and III, and which is built actually on the developed structure.

The Hungarian reader is familiar with the development and manufacturing product composition of the ESZR and MSZR computer technology. Comparing this with the above-outlined Polish computer technology profile, it is evident that our countries have similar tasks in multilateral cooperation. Looking at it more closely, there are important differences as well among our manufactured computer technology means. Such, for example, are our ESZR computers, or among the peripheries the line print out, or among the storages the accomplishment, usability and use specifics of our fix disc, and in a great portion of the cases the manufacturing technologies are also significantly different. Both the similarities and the differences that have developed in the computer technology manufacturing profile in our countries afford possibilities for development, and deepening cooperation and specialization.

It is also well known that among the main tasks of our industrial ministries in bilateral cooperation with similar ministries of other socialist countries, is scientific-technical product and production development activity, preparation of the exchange of goods in manufactured products, their execution and control, the discovery of specialization and cooperation possibilities, etc.

In a given relation the computer technology cooperation is characteristically developed--in addition to the tasks and requirements stemming from multilateral cooperation--for domestic industrial development goals and possibilities and by the effort to attain the goals set earlier by the SZKFP [Computer Technology Central Development Program].

Let us look at several specific industrial development goals as examples and examine these in the mirror of Polish-Hungarian cooperation: it is the task of the domestic industry to undertake an increasing share in the meeting of domestic application demands.

In cooperation with the PPR this means that

--the satisfaction of the demands of domestic users, as evident in selection, can be increased (for example the R-32 computer and the modern data collecting and data processing system, AIR and the TAF AIR's);

--a rise in the technical level of the product structure is suitable for countering the ratio deterioration in commodity trade;

--our products that have a role in cooperation are suitable for balancing imported goods;

--our production development can be realized by intensified use of our existing capacities.

Existing capacities and a developed production structure can be the basis of cooperation or of work distribution and specialization. Such, for example, is the display, the development and manufacture of which in our countries has long been proceeding in volumes reaching a serial magnitude that is economical, and its survival over the medium or long term can be planned.

As a result of actually existing objective cooperation possibilities and limitations, we have aggained important successes in the past 10 years. Our computer technology trade exceeds an annual level of 12 million rubles. Part of the product trade goes directly to consumers, but there is an important ratio which by in direct means consists of peripheries necessary for the completion of our application system (mosiac printer, for example DZM 180) of components (claviature ESZ/olol) or can be accounted upon as an actual part of industrial cooperation.

An understanding was created in the Polish-Hungarian computer technology work group for the preparation of a computer technology agreement over the long term which will be signed at the industrial and foreign trade enterprise level. On the Hungarian side, BUDAVOX AND METRIMEX, with the mediation of VT RT, and on the Polish side the MERA Association are legal entities authorized to sign for the work of preparation.

In the coming years we shall increase mutually advantageous computer technology trade and improve the composition of the goods that serve as the basis of the exchange. We shall seek with intensified care in the whole system to coordinate and systematize each other's subsystems and components. With this, we shall also seek to deepen the possibilities for specialization and cooperation.

6691
CSO: 2502

BRIEFS

UREA MACHINERY CONTRACT SIGNED--TECHNOEXPORT, Prague and TEKHMASHIMPORT, Moscow have signed in Prague a contract for delivery of additional CSSR-produced urea plant production units. These two units will become the seventh and eighth urea production units manufactured for the USSR. [Text] [Prague SVOBODNE SLOVO in Czech 26 Sep 80 p 7]

CSO: 2402

DEVELOPMENTS IN BIOLOGICAL SCIENCES REVIEWED

Tirana BULETINI I SHKENCAVE TE NATYRES in Albanian No 2, Apr-May-Jun 80
pp 3-5

[Article by T. Tartari: "Several Trends in the Development of Biological Sciences in Our Country"]

[Text] The biological sciences occupy an important position in the system of natural sciences. Guided by the party's decisions and Comrade Enver Hoxha's teachings, the biological sciences have provided and are providing an increasingly more specific contribution to the development of productive forces and to the development of our country's economy. Biological research is presently being conducted by the agricultural research institutions, the Natural Sciences Faculty, the Higher Agricultural Institute, the Medical Faculty and the recently opened Biological Research Center. A good number of studies and experiments are also being conducted by specialists at the grass roots, especially in the agricultural units.

The major aspects of biological research which have been treated to date by these institutions are, first of all, the genetic improvement of species and hybrids in agricultural crops, especially among the cereal grains, where fine results have been achieved, making a valuable contribution to the great problem of cereal grains which the Seventh Congress of the Albanian Workers' Party brought out. Likewise, applied biological research has been conducted in the area of improving the breed of livestock, especially cattle, sheep and poultry. Certain aspects of soil biology which are important for increasing soil fertility were studied during this period. We observe numerous applications of biological knowledge and methods in the production of vaccines and serums for the prevention of disease in humans and animals. Special genetic research has been conducted in recent years on insect mutations and specific human and animal characteristics. The rudimentary foundations have been laid for research in the field of plant and animal physiology related to the use of micro-elements. Research has been conducted on environmental pollution by chemical substances or by microbic agents. Regarding the study of the country's flora, the first volume on this subject has been submitted for publication, and studies will continue on subsequent volumes. Several positive results have been obtained in the study of the country's fauna, especially in the direction of ornithology and entomofauna.

The upgrading of laboratories and educational facilities at the institutions where biological subjects are developed has recently been intensified, training programs have been improved on many subjects, and textbooks are being reworked for quite a few biological disciplines. The degree of cooperation and collaboration has increased among various institutions and with the production economy for developing various topics in the field of biological sciences.

All of these results reflect the great work which has been and is now being done in our country to implement the tasks of the Seventh Congress for the development of these sciences.

Even so, it is clear that the present state of development of the economy and science in our country demands that we intensify the rate of biological research further and that we raise it to a higher theoretical and scientific level.

First of all, we need to base the scientific theme of various fields of applied biology on scientific concepts and on contemporary research methods, not as a goal in itself, but because present development permits a deeper, more thorough and more precise interpretation of the various experimental results obtained. This permits the theoretical level of research to be enhanced and scientific recommendations to be disseminated with greater conviction and assurance in open production. This means that we should employ more mathematical, physical, biophysical, chemical and biochemical methods, whether they be theoretical or applied. This brings up the task to start working in such other branches as biophysics, general biochemistry and special biochemistry, so that the various biological sciences may aid in their development as much as possible.

With regard to plant physiology, the scientific problems of plant photosynthesis and metabolism, especially in the cereal grains, are on the order of the day to increase the productivity of these crops which are so very important to the national economy and to utilize rationally and more profitably the great investments which our socialist state has made and is making for agriculture. This means to study those significant indices and parameters of physiology which are closely related to high productivity, which parameters should be studies, experimented and interpreted here in our country because they depend on the specific bioclimatic conditions of our country. With regard to physiological research on animals, we should develop that theme which has to with the best utilization of livestock food resources located in our country, because the rational use of the wide range of foods available, like strengthening the food base, is of first hand importance. However, in order to achieve this, it is necessary that we increase research related to the digestibility of certain foods and their combination in various food rations, in various types and categories of animals, in various technological systems, etc. Studies of the role of vitamins, mineral substances, certain amino acids, ferments, etc., which are strong biostimulants in the feeding of animals, merit special attention in this direction.

Research in the area of plant and animal genetics is an important aspect of the biological sciences where we should concentrate our studies. The results achieved up to now in open production from introducing new species and hybrids into agricultural crops and livestock have created convictions about the great role which genetic selection efforts have in increasing productivity, lowering costs and making agricultural work more productive. However, Neither the manimum theoretical nor practical limitations have been reached in this regard. It is therefore clear that a more profound effort toward genetic selection must stant at the basis of the creation of these types of hybrids. The various genetic studies on the manifestation of heterosis, on the use of mutations, on the heredity of qualitative characters, above all in the cereal grains and, parallel with this, in the industrial crops, vegetables, fruit trees, forage crops, in farm animals and poultry, begin to assume special importance here. On the basis of genetic material which has been created and which exists in our country in the form of lines, breeds, etc., we must do further work to increase their number and to enrich them, as the occasion arises, with material from spontaneous flora or crops or domestic breeds of livestock, studying the genetic basis of the latter. Moreover, the genetic fund can and should be enriched by making more ample use of the mutations method and by making various hybridizations between lines or varieties. In this regard, the use of genotypical methods in selecting and evaluating progenies in order to obtain more certain results in enhansing productivity assumes special importance. In the direction of grain genetics, we have a broad front working for the creation of new hybrid corns with an even shorter vegetative cycle and with a higher content of proteins, lysine and methionine, and for the creation of forage corn hybrids which have a genetic potential of over 150 kv of food units per hectare. For wheat, current tasks include the creation of rust-resistant varieties, the enhancement of protein quality in hard wheats for macaroni products, and to expand the cultivation of Triticum wheat hybrids to the frontier zones.

New applications in the field of genetics of technical and industrial crops are expected to increase the productivity and improve the quality of cotton fiber, to create hybrids in the sunflower, to increase the percentage of sugar in sugar beets by means of polyploily, and to create hybrids in vegetable and fruit cultivation.

Numerous aspects of animal genetics, such as the creation of new hybrids in poultry for eggs and meat, hybrids to produce beef and mutton with higher productivity and lower food costs, are expected to be experimented with and applied to general livestock production in our country.

Just as necessary are the studies which need to be conducted on the problem of plant and animal immunity in order to diminish damages from diseases.

A broad field of biological research is that of the study and use of the country's spontaneous flora, which is quite abundant, and the study of relationships between various plant ecosystems, in connection with the preservation and enrichment of our country's environment. With regard to the study of our country's spontaneous flora, fine results have been achieved in the collection, analysis and scientific classification of it. Much more needs to be done in the future to include these resources in industry, pharmaceutics and agriculture, utilizing that which is rich in organic matter, cellulose and various alkaloids, as well as genetic factors which have been created through evolution.

Of first hand importance in this regard are the studies about the relationships of large groups of ecosystems: forests, meadows and cultivated plants. These studies relate to special problems of biomass production by each ecosystem, the reciprocal involvement and influence had by the proper development or lack thereof of one ecosystem over another, and the role of the harmonic development of these plant and animal ecosystems in keeping our environment clean.

The expansion and intensification of the scientific theme with regard to the study of the country's fauna, particularly beneficial fauna, is likewise a current task facing our country biological sciences.

Great scientific interest is being shown in the development of general microbiology, which is closely related and fairly important for raising the research in the field of soil microbiology to a new level in order to improve soil fertility, for the highly valued fermentation processes in the country's food and pharmaceutical industries, and for special microbiology in human and veterinary medicine.

The rapid development of the socialist economy in our country demands, among other things, the establishment of production on a sounder scientific basis, and that the biological sciences, with their objective laws of natural development, constitute a sound base for the advancement of many production fronts in our country.

5658
CSO: 2102

BULGARIA

NEW PHOTO PROCESSING TECHNOLOGY DEVELOPED

Sofia ZEMEDELSKO ZNAME in Bulgarian 23 Sep 80 p 2

[Article by Georgi Vasilev: "A World-Standard Bulgarian Invention"]

[Text] Original Technology for New Types of Photographic Materials With Extensive Application

As a result of basic research conducted by the Central Laboratory for Photographic Processes of the Bulgarian Academy of Sciences on the mechanism of interaction between light and solid state substances, the development of new types of photographic materials using an essentially new technology became possible: A dry method through the evaporation of light-sensitive substances in a vacuum. The functional and technological advantages of the new method have been thoroughly substantiated and patented.

It is a question of the production of a number of special photographic materials for industrial purposes--photolithography, microphotography, photo documentations, printing, and recording electrons and ions. Some of them are used in microelectronics and electrical engineering. Their characteristics greatly restrict the process of electronic development. The photographic materials needed for such purposes are not being produced in the socialist countries and must be imported. Tests of Bulgarian plates conducted at the Karl Zeiss Works in Jena, in the GDR, have indicated that in terms of separation capacity they exceed all other such materials known in the world with a sensitivity one thousandfold higher. Naturally, such new materials require the necessary processing conditions and special equipment.

On the basis of silver-free light-sensitive substances a technology has been developed and a pilot line built for the production of photographic materials for flexible printed circuits and flat conductors. The flexible printed circuits and flat conductors, regardless of the way they were produced, are the most progressive method used in putting together electronic and electrical engineering items.

These are one-of-a-kind developments which could place some Bulgarian industrial sectors in a leading position in the world. They are the creative accomplishment of a scientific collective headed by corresponding member Prof Dr Y. Malinovski.

The recognition of scientific achievements of this collective will be the international symposium on model research in photography and new photographic recording systems, sponsored by the Central Laboratory for Photographic Processes of the Bulgarian Academy of Sciences, to be held from 28 September to 5 October in Varna.

The purpose of the symposium will be to provide a detailed discussion of new ideas and achievements related to the mechanism of the photographic process. It is considered that the use of suitable models could contribute to the better understanding of its individual stages. The academic discussion of the results obtained on the basis of model systems could be of decisive significance in improving light recording systems as a whole.

Considering the growing interest in the development of nonconventional photographic materials, the symposium will accept works depicting photographic processes using different inorganic photosensitive substances and the use of new photographic recording media.

5003
CSO: 2202

BRIEFS

NEW ETHYLENE PLANT--Prague, 22 Sep--The creation of a large ethylene-producing plant has been completed at the chemical combine named for Czechoslovak-Soviet friendship in the north Czech city of Litvinov. This signifies the fulfillment of one of the key 5-year plan targets approved by the 15th CPCZ Congress. Today's issue of RUDE PRAVO publishes the speech which J. Korcak, member of the CPCZ Central Committee Presidium and premier of the Czech Socialist Republic, delivered at a construction and chemical workers aktiv meeting. The newspaper points to the need for strict economy and better use of oil, more than 90 percent of which the republic gets from the USSR. The International Socialist Division of Labor gives the CSSR great potential for resolving its national economic problems. Thus, long-term cooperation with the GDR has enabled Czechoslovak petrochemical workers to make rational use of capital investments in the construction of the Litvinov complex and to create optimum capacities. Specialization and collaboration between the CSSR and the Soviet Union in this sphere enable Czechoslovakia to concentrate efforts on the development of the small- and medium-tonnage chemical industry. The CSSR's orientation toward producing less energy-intensive output ensures considerable benefits, since precisely the chemical industry consumes up to 21 percent of all the energy produced in the country and 32 percent of total fuel consumption, RUDE PRAVO points out. [Text] [LD261023 Moscow PRAVDA in Russian 23 Sep 80 p 5]

RADIO RELAY COMPUTER INTERCONNECTION--Radio relay interconnection between an EC 1040 computer at the Central Computing Center of the Czechoslovak Academy of Sciences [CSAV] and an EC 1010 computer at the CSAV Geophysical Institute in Prague took place on 25 September 1980. The approximately 8-kilometer line has become the first operational part of a future CSAV computer network. This isolated technological achievement is the first of its kind within CEMA, resulting from cooperation between two CSAV establishments, the Hungarian Research Institute of Telecommunications and the TESLA enterprise. [Text] [Prague SVOBODNE SLOVO in Slovak 4 Oct 80 p 7]

NATURAL GAS DISCOVERY--Natural gas was discovered close to Uhrice, Hodonin district, during oil exploration drilling done by Luzice branch of the Moravian Oil Fields Hodonin enterprise [Moravske naftove doly Hodonin]. The high quality, high-pressure natural gas deposit was struck in the depth of 2,500 meters. This is the first important discovery of natural gas in Czechoslovakia. [Text] [Bratislava PRACA in Slovak 4 Oct 80 p 9]

NEW DICALCIUM PHOSPHATE PLANT--Construction of a Soviet-designed dicalcium phosphate plant began on grounds of FOSFA plant in Breclav-Postorna. The plant expects to produce annually 50,000 tons of this important livestock nutrient. This figure will double the current yearly tonnage of dicalcium phosphate imported by the CSSR from the West, resulting in savings of Kcs 220 million in hard currencies annually. [Text] [Prague SVOBODNE SLOVO in Czech 3 Oct 80 p 4]

FIELD MOUSE OUTBREAK--Aerial application of highly effective pesticide preparation "Stutox" began in the South Moravian districts of Trebic, Brno, Vyskov and Prostejov, to exterminate this year's overpopulation of field mice. According to the Experimental Ecology Department of the Research Institute of Vertebrates in Studenec, yearly damage by field mice to Czechoslovak fodder cultivations amounts to between Kcs 150-250 million. [Text] [Prague LIDOVA DEMOCRACIE in Czech 2 Oct 80 p 4]

NATURAL GAS STORAGE IN MINES--The empty shafts of the "25 February Mine" in Bohutin, in which mining for lead, silver, antimony and zinc has been completed, will be used for storage of tens of millions cubic meters of natural gas. This will enable surplus gas from the summer to be stored for peak consumption in the winter. [Text] [Prague PRACE in Czech 2 Oct 80 p 3]

CSO: 2402

HEAD OF COMPUTER TECHNOLOGY APPLICATIONS DEVELOPING SOCIETY INTERVIEWED

Budapest SZAMITASTECHNIKA in Hungarian Jul-Aug 80 p 3

[Interview with Dr Matyas Arato, chairman of the managing council of the Computer Technology Applications Development Society [SZAT] and manager of SZAMKI (Computer Technology Training Center) by Dr Ivan Szabo in early July]

[Text] As we already briefly informed our readers in our June issue, the responsible managers of 17 computer technology institutes announced on 22 May under their signature their intention to establish as a research development society the SZAT and their intention to cooperate in its work in the future.

[Question] What were the reasons for establishing the SZAT? What are the specific goals of the society in the coming years?

[Answer] The establishment of the SZAT was preceded by long preparatory work, the coordination of which was carried out by the so-called Subjects Committee of the Basic Institutes. The inadequacy of basic domestic software supplies and the lack of unified application software in enterprise applications were the basic causes which stimulated the Basic Institutes to make joint efforts toward ending the insufficiencies. In recognizing the domestic demands, we started out by recognizing the fact that despite the inadequacies, a given institute could still survive for a long time, but could not realize a significant advance in the field of software supply without close cooperation. To this end, it is necessary to set forth exactly every partial task for determining the national tasks as a whole and determining the further development and pursuit of software products already under development.

Basically, these will be the most specific goals of the society in the coming years.

[Question] What kind of means will the society have to realize the goals? Central financing is the essential basis of its cooperation. Is it not conceivable that on the basis of joint risk undertaking and appropriate sharing of results they will work out specific subjects?

[Answer] Every member of the society has significant, although heterogenous, means for the realization of its goals. Similarly significant are the human resources. In the solution of central financing application tasks, the society wishes to operate as the base. Contributing to this end, and now under development, is the making of those software products which the institutions would carry out through joint risktaking in addition to central financing. Here I would like to emphasize the formation of application program systems--I am thinking primarily of recording, managing and guidance systems--into products, the maintenance, development and system economy of which would be undertaken by a given institution of the society.

[Question] In your judgment how interested are the individual institutes which are massed in the society in participating in standardization work and in the introduction of standards?

[Answer] The institutes of the society are not only interested in standardization work, but also demand the introduction of standards and their prescription in organization, programming and documentation. A significant share of the institutions do not have adequate resources to participate in all standardization work, but everyone demands and urges the introduction of standards.

[Question] According to the contract the members of the society are to set up joint training forms. Do they desire to use in this work the possibilities offered by SZAMOK [Computer Technology Training Center], the basic training institution of Hungarian computer technology?

When in the field of standardization/unification the common results of the society will be established, training work can contribute greatly to their dissemination. In fact, it is hardly conceivable that training can stand on any other basis. Therefore, it is very important to maintain relations with SZAMOK and other training institutions, first at an information level and later on a broader basis, or in a system. What is your view on this group of questions?

[Answer] The members of the society seek to receive experiences and transmit information, which also includes the development of certain training forms. Such forms may consist of joint programs and seminars. In addition, we also wish to take advantage of those possibilities which SZAMOK offers at a high level. The possibilities for developing closer ties with SZAMOK is implicit in the question itself, and as for myself I agree with it in a far-reaching manner.

[Question] Could the information and orientation tasks of the society be helped in the application of computer technology by the information activity of SZAMOK, the basic library, the BABILON interactive retrieval system, and periodical and book publication (particularly in researching successful problem solutions, analyzing and adapting them). How do you judge their role in the realization of goals?

[Answer] The role of SZAMOK's information activity and of the basic library can be further developed by linking the library services of the member institutions to the basic library services of SZAMOK. In this way computer processing can be made more rapid and efficient, in which SZAMKI on its own behalf earlier reported it was joining. I am convinced that not only the library services of the institutes that are joining, but also those already participating will gain a great deal from central records.

[Question] In the present economic situation it is particularly important that the interested institutions and enterprises should carry out their computer technology application activity in rational professional distribution, as was pointed out already by Lajos Pesti, deputy chairman of the KSH [Central Statistical Office] at the 22 May founding session.

The emphasis should be directed toward responsible work distribution, something to which the government is also devoting a great deal of attention. What kind of results are you expecting from the society in this area?

[Answer] We see rational work distribution not only in the coordination of plans and the discussion of reports, but also in the solution of such large-scale tasks as the institutions cannot undertake separately. I am thinking here on the making of such a program product system on the five-unit terminal ESZR computers as is shown in the case of IBM by the PICS, or the COPICS, naturally proceeding from domestic demands, conditions and possibilities.

[Question] Please name several kinds of tasks which according to the provisions of the contract the society, in event of demand, performs for the preparation of upper-level decisions. What specific tasks do you do for SZAT?

[Answer] The basic institutes desire to evaluate that part of the Sixth Five-Year Plan which deals with enterprise applications as well as the enterprise application, software technology, software supply tasks of OKKFT (National Medium-Range Research Development Plan). The institutes not only have experience but the resources necessary for the solutions.

[Question] How much will this unity help in supplying the computer with effective software and thereby make general the application of modern computers?

[Answer] The unity of the basic institutes assures possibility for the effective circulation of good solutions, for seeking economic solutions, and also provides the forms and boundaries of typification and standardization.

[Question] Please explain in more detail what you mean by the provisions in point one of the contract according to which in case of a sufficient number of applicants they will examine the possibilities of software service and in the hardware area the possibility of establishing a common base?

[Answer] All of the institutes which have the same computer pool also have their own hardware or software service. In the case of the basic institutes there is hardly any example of the use of the NOTO OSZV service. Without seeking to evaluate the work of the NOTO OSZV, I can assuredly announce that the service experts of the institutes wish to be over the NOTO OSZ services. Bringing these to a common basis would result in enormous savings if everyone wants this and naturally if the reliability level of the computers reaches a certain level.

[Question] In realizing the goals set forth in the society's contract, how does the NOTO OSZ fit in? What are the special tasks of the OSZV and the tasks specially referring to the members of the society's contract? Are these tasks different from the national tasks of the NOTO OSZV?

[Answer] In the answer to the previous question we already spoke of the NOTO OSZV, whose work the basic institutes wish to support, and they too demand a higher level of OSZV services. This development can only be the result of a longer process, but the goal is obvious and clear.

6691
CSO: 2502

COMPUTER PROGRAMS FOR STUDENTS, GRADUATES OF CHEMICAL ENGINEERING

Budapest NEPSZABADSAG in Hungarian 4 Oct 80 p 6

[Excerpts] In the fall of this year a scientific conference entitled "Chemplant 80" was held in Keszthely, Hungary. The international conference was arranged at the request of the Federation of European Chemical Engineers by the Hungarian Chemical Association in collaboration with the computer work group of the Czech Chemical Association. The conference dealt with the use of computers in the planning and establishment of chemical plants. Widespread interest in the topic was revealed by the fact that one of the lectures was delivered by a specialist from the United States.

Hungary has developed two computer packages devoted to this field under the names of Chemisys and Forsim. Chemisys is known professionally as an organizing program, because it ties together the programs designed for teaching various other subjects. Besides being a computer program itself, Chemisys serves as guide for writing the other programs: it contains directions which unify the work. The University Computer Center which has and continues to coordinate the working out of the programs informs the various computer training centers about availability of new programs and sends them copies. Preparation of the data basis and establishment of the program library for Chemsys was the work of six institutions: the University Computer Center, the department of applied chemistry of the Attila Jozsef University of Sciences in Szeged, and the faculties of chemical technology, chemical operations, general and analytical chemistry, chemical industry machines and agricultural industries of Budapest Technical University. At present, not all universities have computer centers, but all have free access to the computer network of the Ministry of Culture for teaching purposes. This ministry is currently establishing a nationwide computer center network. Other institutions in other cities will eventually have access to the network through terminals.

The first seven textbooks which are to be used in conjunction with Chemisys as a teaching aid have already gone to press. The work involved in preparing said books was performed as government commissioned research the funding for which was voted 2 years ago by the government's Science Policy Committee.

The computer assisted teaching and simulating system known as Forsim is an important part of Chemisys. With the aid of Forsim, university students can learn to control or solve process regulating problems through simulation in a so-called "dry laboratory."

CSO: 2502

UTILIZATION OF MPS-7541 CALCULATOR INTEGRATED CIRCUIT

Budapest HIRADASTECHNIKA in Hungarian Vol 31 No 8, 1980, pp 294-296

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[Abstract] The MPS-7541 calculator integrated circuit, originally developed for pocket calculators, was examined with the aim of finding new utilizations for it, specifically to use it to form reciprocals for period-measuring frequency meters. A circuit was developed which operates the integrated circuit with a synchronous control device feeding logic "1" signal to the Y1 input if a number is fed to the memory and to the Y2 and Y3 inputs if an operational code is entered. With the aid of this modification the MPS-7541 becomes capable of forming reciprocals. This capability is used in frequency measurements in the low-frequency range where inaccuracies are often encountered because of the fact that only a small number of frequencies can be measured within a practicable measuring time with conventional frequency meters. Once, through reciprocal formation, period times rather than frequencies are measured, the measuring time can be significantly shortened without sacrificing accuracy. The MPS-7541 is particularly suitable for this purpose since it requires a service voltage of +5 V, so that it can be operated from the same supply as the TTL components. The system developed can be readily modified to provide printout. Multiple programming is also feasible with larger-capacity memories. Figures 3, no references.

2542
CSO: 2502

BRIEFS

VILATI MODULES--Many different kinds of guiding systems, from machine tool control to astronomical telescopes, can be built from 30 unified industrial-electronic elements, the manufacture of which has been started by VILATI (Institute of Electrical Automation). With the development of modular industrial-electronic systems, the manufacture of automated equipment has become more economical. The unified modules make it possible to manufacture equipment in large runs that can be warehoused as well as different kinds of single pieces of equipment. The number of built-in parts for controls developed with unified modules has declined to one-third of what it was before and compared to traditional equipment for similar purposes it requires about one half the energy. Computers from modules made at the Electrical Automation Primary Contracting and Manufacturing Enterprise, and supplemented with unified industrial module elements are suitable for carrying out much more complex tasks than heretofore. When the technology is changed--without transformation--the system can be reprogrammed at any time. [Text] [Budapest SZAMITASTECHNIKA in Hungarian Jul-Aug 80 p 3] 6691

CSO: 2502

BRIEFS

REPLACING COMPUTERS WITH MICROCONTROLLERS--A prototype microcontroller was exhibited for the first time in Poland at the Poznan International Fair. It was developed at the research and development center of the "Mera" Automation Systems Plants in Poznan. The microcontroller looks like an ordinary box which contains printed circuit boards and large-scale integrated circuits. Each board is capable of controlling a certain section of production. After appropriate programming, a single microcontroller is capable of controlling other microcontrollers and producing the appropriate reaction for conducting the production process. Microcontrollers may be used whereever computers are either unprofitable or unnecessary and whenever it is necessary to collect, process and analyze data related to controlling production flowlines. It is very likely that the first microcontrollers will replace, in 1980, the computer used for electrolysis at the "Konin" Aluminum Plant and subsequently will be used in the production of light bulbs at the "Polam" plants in Pila and at the warehouse of the Kasprzak Plants in Warsaw. The "Mera" Automation Systems Plants in Poznan intend to begin series production in 1981. [Excerpts] [Warsaw KURIER POLSKI in Polish 18 Aug 80 p 2]

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